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EXAMINER

MA, JOHNNY

ART UNIT PAPER NUMBER

2617

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AW

Office Action Summary

Application No.

09/583,388

Applicant(s)

GORDON ET AL.

Examiner

Johnny Ma

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claim 8 is withdrawn in view of the new grounds of rejection as discussed below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zdepski et al. (US 2002/0122598 A1) in further view of Ribas-Corbera et al. (US 6,385,345 B1 of record).

As to claim 8, note the Zdepski et al. reference that discloses an interactive television system and method for displaying a graphical user interface using insert pictures. The claimed "method for encoding a user interface which comprises an information section and a display section" is met by "the video delivery system provides a compressed background picture [information section] and one or more compressed insert pictures [display section]. Each of the compressed insert pictures represents a display portion of the GUI" (Zdepski 2:51-65). The claimed "dividing the information section into macroblocks" is met by "[i]n the preferred method of the present invention, the encoder compresses both the background and insert pictures, with the background bit stream having the necessary slice structure" (Zdepski 10:39-42) wherein "[e]ach of the background and insert pictures are comprise of slices" and the slices comprise macroblocks (Zdepski 10:54-11:36). Note, the Zdepski et al. reference discloses encoding a

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MPEG-2 compliant stream (Zdepski 10:39-67). However, the Zdepski et al. reference does not specifically disclose the procedure in which this encoding is performed. Now note, the Ribas-Corbera et al. reference that discloses a method and apparatus for selecting image data to skip when encoding digital video. Ribas-Corbera et al. reference discloses dividing into macroblocks wherein “[i]n block-based image coding, the image frame 11 to be encoded is decomposed into multiple image blocks 14 of the same size, typically of 16x16 pixels per block 14” (Ribas-Corbera [0029]). The claimed “generate a transformed image” is met by “[t]he pixel values of the block 14 are transformed in transform 16 into a set of coefficients” (Ribas-Corbera [0029]). The claimed “quantizing the transformed image to generate a quantized image and encoding the quantized image to generate an encoded image of each macroblock” is met by “[t]he coefficients output from transform 16 are quantized in quantizer 18 according to a set of quantization values 22 and further encoded in coder 20” (Ribas-Corbera [0029]). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zdepski et al. MPEG encoding with the Ribas-Corbera block skipping for the purpose of providing “more efficient bit rate control by not allocating bits to blocks or frames that should not be encoded” (Ribas-Corbera et al. [0014]). The claimed “wherein the information section includes background stripes” is met by the Zdepski et al. background slices (Zdepski 10:54-65) wherein it is inherent that “the macroblocks do not cross any border between two adjacent background stripes” as defined in the MPEG specification, also note Figure 4A where the slices do not overlap.

4. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zdepski et al. (US 2002/0122598 A1) in further view of Ribas-Corbera et al. (US 2002/0122598 of

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record), Vasconcelos ("Pre and Post-Filtering For Low Bit-Rate Video Coding" of record) and Lee et al. (US 5,748,789 of record).

As to claims 10 and 11, note, the Zdepksi et al. and Ribas-Corbera combination teaches forward transforming, quantizing, and encoding as discussed in the rejection of claim 8. However, the Zdepksi et al. and Ribas-Corbera combination is silent as to low-pass filtering. Now note the Vasconcelos reference teaching pre and post-filtering for low bit-rate video coding. The Vasconcelos reference discloses pre-filtering to eliminate as much high frequency information as possible without compromising image quality and aims to eliminate high frequency sensor noise to avoid blurring of object boundaries (Vasconcelos, see Section 2. Pre-Filter). The Vasconcelos reference further discloses the use of low-pass filtering in the pre-filtering step (Vasconcelos, see Section 2. Pre-Filter). The claimed low-pass filtering reduces visual defects from encoding of the background stripes is met by the disclosed filtering to avoid blurring of object boundaries. Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zdepksi et al. and Ribas-Corbera et al. combination teaching a forward transformed image for quantization and encoding with the Vasconcelos prefiltering for the purpose of facilitating the separating of background information and graphics wherein it is understood that the prefiltering step occurs before quantization. Furthermore, the Zdepksi et al. reference does not specifically disclose encoding a blank background for the display section by skip encoding, when subsequent values of the display section do not change from corresponding intra-coded values at a predetermined time. Now note the Lee et al. reference discloses transparent block skipping in object-based video coding systems wherein "[c]ompression of video information (i.e., video sequences or

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signals) can provide economical storage and transmission of digital video information in applications that include, for example, interactive or digital television and multimedia computer applications... Conventional video compression techniques utilize similarities between successive image frames, referred to as temporal or interframe correlation, to provide interframe compression in which pixel-based representations of image frames are converted to motion representations. In addition, conventional video compression techniques utilize similarities within image frames, referred to as spatial or intraframe correlation, to provide intraframe compression in which the motion representations within an image frame are further compressed” (Lee 7:47-65). The claimed “skip encoding, when subsequent values of the display section do not change from corresponding intra-coded values at a predetermined time” is met by “[o]nce these transparent macroblocks and blocks are identified, the coder and decoder can skip coding for these macroblocks or blocks. Skipping of transparent information blocks applies when the entire transformation block is transparent... An example of a transparent macroblock is macroblock 1548, which lies entirely outside object 1540” (Lee 43:63-44:44:6). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zdepski et al. blank background with the Lee et al. skip encoding for the purpose of providing economical storage and transmission of graphical user information to the user. Note the skipping of transparent macroblocks, i.e. the background, equates to the skip encoding of the subsequent values of the display section that do not change. The claimed “wherein the information section includes background stripes” is met by the background slices as discussed in the rejection of claim 8.

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5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zdepski et al. (US 2002/0122598 A1) in further view of Ribas-Corbera et al. (US 6,385,345 B1 of record) and Eschbach (US 5,379,122).

As to claim 12, the claimed “wherein lossless encoding is applied to the quantized image.” Note the Zdepski et al. and Ribas-Corbera et al. combination teaches the encoding of a quantized image as discussed in the rejection of claim 8. however, the Zdepski et al. and Ribas-Corbera et al. combination is silent as to whether the encoding process is lossy or lossless. Now note the Eschbach reference that discloses a decompression of standard ADCT-compressed images. The claimed “wherein lossless encoding is applied to the quantized image” is met by the encoding of an image “by a forward transform coding operation... each transform coefficient is divided by a quantizing value from a quantization table and the integer portion of a result is used as a quantized transform coefficient, and the blocks of quantized transform coefficients are encoded with a lossless encoding method” (Eschbach 5:1-15). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zdepski et al. and Ribas-Corbera et al. encoding of a quantized image with the Eschbach lossless encoding of the quantized image for the purpose of providing coding/transmission efficiency by reducing bandwidth/storage constraints without the further loss of image data.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnny Ma whose telephone number is (571) 272-7351. The examiner can normally be reached on 8:00 am - 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jm



VIVEK SRIVASTAVA
PRIMARY EXAMINER